

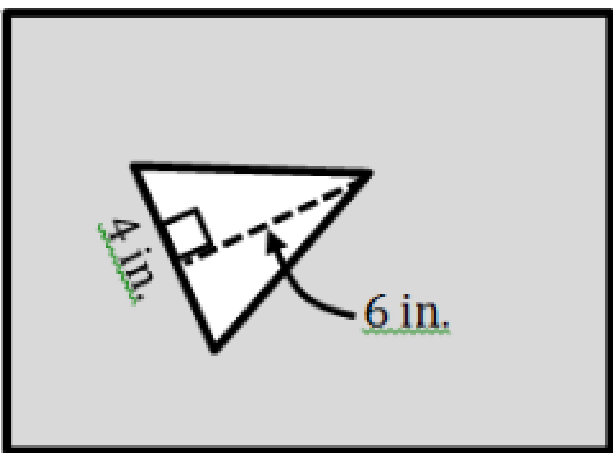
04/02/14    Agenda:

- Review Homework
  - Worksheet 2 - Perimeter & Area of Triangles
- Section 11.2 day 1 - Area of Rhombi & Kites
- Homework
  - Worksheet 3 - Area of Rhombi & Kites

Warm Up - **Get Your Homework Out!**

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Find the area of the shaded section:



22 in.

11 in.

$$\begin{aligned} A_{\square} &= b \cdot h \\ &= 22 \cdot 11 \\ &= 242 \text{ in.}^2 \end{aligned}$$

$$\begin{aligned} A_{\Delta} &= \frac{1}{2}bh \\ &= \frac{1}{2} \cdot 22 \cdot 6 \\ &= 66 \text{ in.}^2 \end{aligned}$$

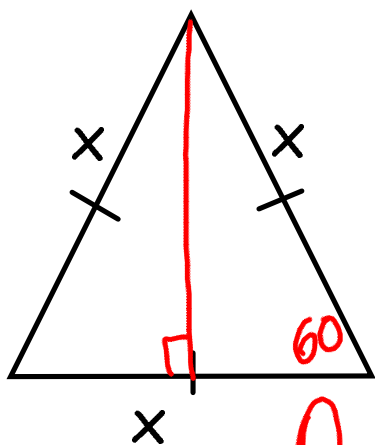
$$\begin{array}{r} 242 \\ - 66 \\ \hline 176 \end{array}$$

230 in.<sup>2</sup>

Section 11.2 day 1 - Area of Rhombi & Kites  
 Targets 11D & 11E

April 2, 2014

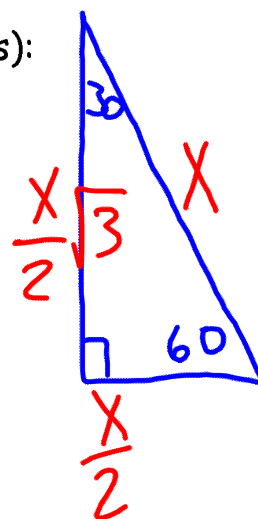
Revisit the area of an equilateral triangle.  
 Lets create an equation that uses the side length (s):



$$A_{\text{Triangle}} = \frac{1}{2} \cdot b \cdot h$$

$$= \frac{1}{2} \cdot \frac{x}{2} \cdot \frac{x\sqrt{3}}{2}$$

$$A_{\text{EQUILATERAL } \Delta} = \frac{x^2 \sqrt{3}}{4}$$



## Section 11.2 day 1 - Area of Rhombi & Kites

### Targets 11D & 11E

April 2, 2014

**Goal:** Find the Area of Rhombi & Kites.

**Review:**

**Perimeter:** The total distance around an object.

**Area:** The total number of square units inside an object.

$$A_{\text{Square}} = s^2 \text{ or } b \cdot h$$

$$A_{\text{Parallelogram}} = b \cdot h$$

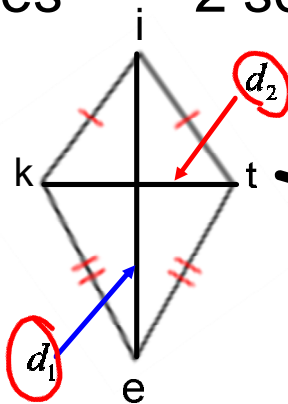
$$A_{\text{Rectangle}} = b \cdot h$$

$$A_{\text{Triangle}} = \frac{1}{2} \cdot b \cdot h$$

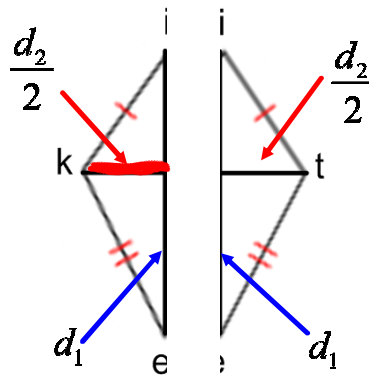
$$A_{\text{Equilateral Triangle}} = \frac{s^2 \sqrt{3}}{4}$$



Kites 2 sets of congruent disjointed sides



has 2 diagonals:  $d_1$  and  $d_2$



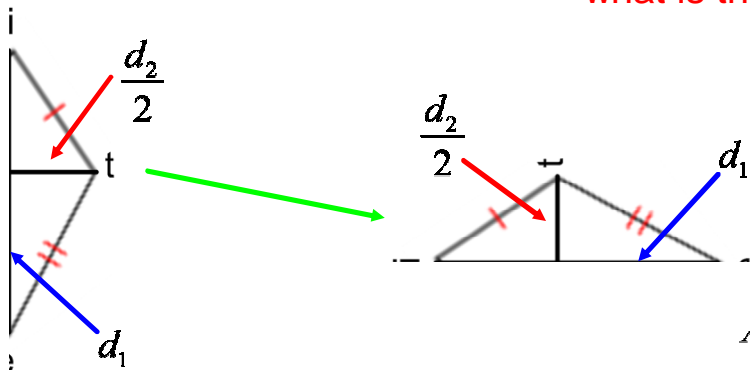
in other words

both triangles are congruent



take half a triangle and rotate it,

what is the area of one big triangle?



$$b = d_1$$

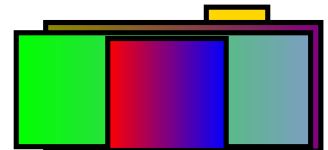
$$h = \frac{d_2}{2}$$

$$A_{\text{triangle}} = \frac{1}{2} \cdot d_1 \cdot \frac{d_2}{2} = \frac{d_1 \cdot d_2}{4}$$

and there are two triangles

SO  $2 \cdot A_{\text{triangle}} = 2 \cdot \frac{d_1 \cdot d_2}{4} = \frac{1}{2} d_1 \cdot d_2$

$$A_{\text{kite}} = \frac{1}{2} d_1 d_2$$



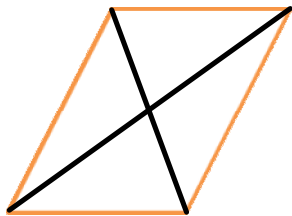
a rhombus- is a parallelogram

so

$$A = bh$$



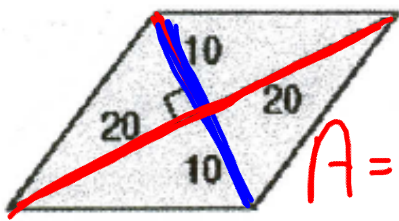
but also sorta like a kite whose sides are ALL congruent



so

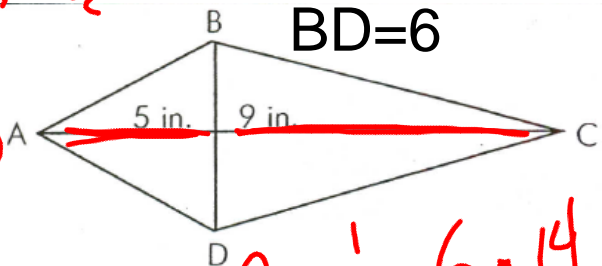
$$A = \frac{1}{2} d_1 \cdot d_2$$

find the area of the rhombus and kite

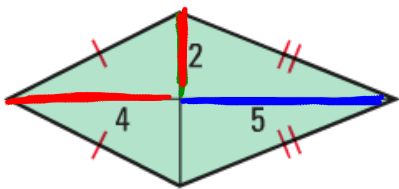


$$A = \frac{1}{2} d_1 \cdot d_2$$

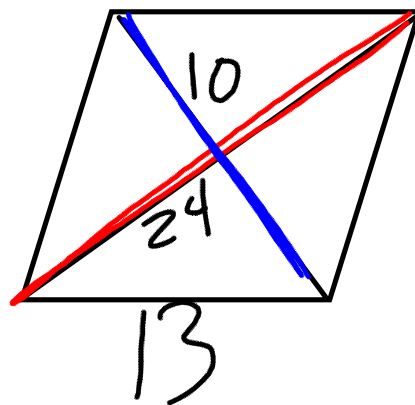
$$A = \frac{1}{2} \cdot 20 \cdot 40 = 400 u^2$$



$$A = \frac{1}{2} \cdot 6 \cdot 14 = 42 u^2$$



$$A = \frac{1}{2} \cdot 9 \cdot 4 = 18 u^2$$



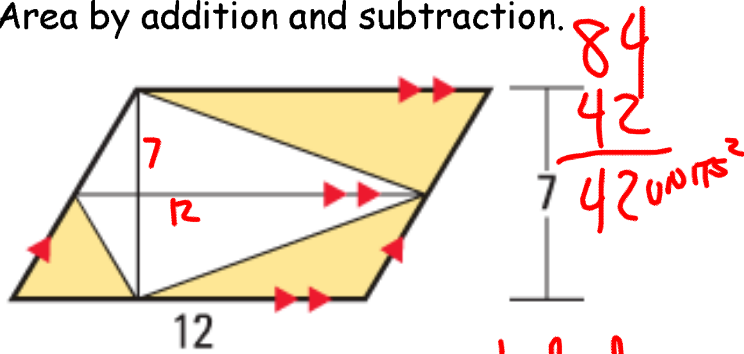


## Section 11.2 day 1 - Area of Rhombi & Kite

### Targets 11D & 11E

April 2, 2014

Area by addition and subtraction.



$$A_{\square} = bh$$

$$= 12 \cdot 7$$

$$= 84 \text{ units}^2$$

$$A_K = \frac{1}{2} d_1 \cdot d_2$$

$$= \frac{1}{2} 7 \cdot 12$$

$$= 42 \text{ units}^2$$

